

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit	: 1798	Customer No. 035811
Examiner	: Michael B. Nelson	
Serial No.	: 10/584,741	Docket No.: TIP-06-1177
Filed	: June 26, 2006	
Inventors	: Shigeru Tanaka	
	: Masatoshi Ohkura	
	: Jun-ichi Masuda	
	: Kouichi Tonegawa	Confirmation No.: 5793
	: Reiko Morita	
Title	: BIAXIALY ORIENTED WHITE	
	: POLYPROPYLENE FILM FOR	
	: THERMAL TRANSFER RECORDING	
	: AND RECEIVING SHEET FOR	
	: THERMAL TRANSFER RECORDING	
	: THEREFROM	

Dated: October 5, 2011

**RESPONSE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is submitted in response to the Official Action dated July 11, 2011.

All of the claims stand rejected under 35 USC §103 over the combination of Asakura in view of Sadamitsu. The Applicants note with appreciation the Applicants' detailed comments, however, the Applicants respectfully submit that the combination would result in a completely different film.

The Applicants will focus their comments primarily on the portion of the rejection on page 4 of the Official Action, in the second whole paragraph, which substantially recites that "Given that the B layer of Asakura is substantially identical to the B layer composition disclosed on page 98 of the Applicants' specification," one skilled in the art would "expect" the Asakura B layer to exhibit the claimed half-crystallization time.

Before addressing the merits of that statement, the Applicants first note that utilizing the language wherein one skilled in the art would “expect” an object to exhibit characteristics is essentially an inherency position, irrespective of the absence of the word “inherent.”

Meeting inherency is a difficult task and there is a high standard to meet the requirements for inherency under MPEP §2112. Specifically, it is not enough that a claimed characteristic might be present, could be present or is even likely to be present. Inherency requires that the claimed characteristic must “necessarily” be present. If the Patent Office cannot establish that the physical characteristic is “necessarily” present, then inherency is not established.

The Applicants respectfully submit that inherency has not been met in this situation since the B layer of Asakura is not the same as B layer of the Applicants’ solicited claims. The factual reasons underlining this error in the rejection follow.

The Applicants respectfully submit that the film of Asakura does not have a B layer with a half-crystallization time of about 60 seconds or less. In that regard, reliance on embodiments 1 and 2 of Table 1 on the last page of Asakura and the means of solving the problem on page 5 of Asakura do not correspond to the subject matter of Claim 8. In particular, embodiments 1 and 2 of Table 1 of Asakura contain 3 and 6 wt% of PMP in layer B, respectively. However, Example 9 on page 98 of the Applicants’ specification which contains 5% of PMP is directed to a different aspect of the Applicants’ overall disclosure. In other words, the structure referred to in Example 9 is not encompassed by Claim 8. Other not-now-pending claims were directed to the subject matter of Claim 8. Hence, the Applicants respectfully submit that the rejection does not make a proper comparison of the prior art to the Applicants’ structure.

Instead, there are other non-limiting representative Examples in the Applicants’ specification which are illustrative of the subject matter as recited in Claim 8. In that regard, the Applicants invite the Examiner’s attention to Examples 10-25, which are more relevant. However, before addressing those Examples, the Applicants note that there is a definition of the half-crystallization time in their specification and its association with the crystal nucleating agent. The Applicants thus invite the Examiner’s attention to paragraph [0037] of their application as filed, which recites as follows:

$t_{1/2}$  of said B layer is preferably less than 50 seconds, more preferably, less than 40 seconds. In addition, as the  $t_{1/2}$  of B layer becomes shorter, the above-mentioned product quality and

productivity is apt to be more improved. Accordingly,  $t_{1/2}$  of the B layer is, in view of productivity, most preferably, "0 second" which is defined below. However, when it is processed to a receiving sheet for thermal transfer recording by providing a receiving layer on the B layer, if drawability in film formation process worsens or adhesion with the receiving layer (or anchor layer) worsens or to make the void ratio of the B layer more than 0%, it is not necessary that  $t_{1/2}$  is 0 second.  $t_{1/2}$  can be, for example, controlled by selecting type or amount of nucleating agent and HMS-PP exemplified below.

This shows the connection between the half-crystallization time and the selection and type of nucleating agent. This is important as illustrated in subsequent paragraph [0094] as reproduced below:

Regarding the amount to be added of the above-mentioned crystal nucleating agent, although it depends on type of the crystal nucleating agent, it is preferable to be 0.001 to 1% by weight per total amount of the whole resin of the B layer. If the added amount of the crystal nucleating agent is less than the above-mentioned range, the effect of decreasing  $t_{1/2}$  may not be obtained. When the added amount of the crystal nucleating agent is more than the above-mentioned range, even if it is added more than that,  $t_{1/2}$  is not shortened, and economical efficiency may worsen, slipperiness may worsen and glossiness may become outside the range of this invention or dispersibility of the nucleating agent may worsen and thereby may generate a surface defect.

It can be seen from reference to paragraph [0094] that the amount of nucleating agent should be 0.001 to 1% by weight of the total amount in layer B. This is reflected in Examples 10-25 of the Applicants' specification and as shown in Tables 4 and 5. In particular, the amount of crystallization nucleating agent is within the recommended range as taught by the Applicants' specification and results in half-crystallization times of about 60 seconds or less.

This is sharply contrasted to Asakura which discloses crystal nucleating agents in an amount of  $1 \times 10^6$  to  $1 \times 10^3$  by weight of the total amount of resin in layer B. It can be immediately seen that the amount of crystal nucleating layer is typically much less than the amount in the Applicants' layer B. As a result, those skilled in the art would have a reasonable expectation that the half-crystallization time of the Asakura layers would be more than 60 seconds. Therefore, it inherently follows that the half-crystallization times of Asakura would

more than likely not be within the Applicants' claimed range, but instead, would likely be outside of that claimed range.

However, there is more. The Applicants' Example 9 is different from Examples 1 and 2 of Asakura that include 0.0006 weight %  $\gamma$ -quinacridone because the Applicants' B layer of Example 9 does not include a crystal nucleating agent. Asakura discloses quinacridone or quinacridonequinon as a  $\beta$ -crystal nucleating agent. This is a problem as recognized by the Applicants. They discovered that care must be used when adding the  $\beta$ -crystal nucleating agent as shown in the following description in the Applicants' specification:

[0093] Regarding these nucleating agents, when it is added to polypropylene resin constituting the B layer, since there are some cases in which a void which penetrates through both sides of film (so-called through hole) is formed, its selection should be careful. When a through hole is formed, because smoothness worsens or surface glossiness decreases, sensitivity may worsen when processed to the receiving sheet by providing a receiving layer on the B layer, or when a receiving layer (anchor layer) is provided by coating a solution prepared beforehand, the coated solution penetrates inside the film and a receiving layer may not be formed well.

This is completely different from Asakura which adds and increases the  $\beta$ -crystal nucleating agent simply to attain a half-crystallization time. However, smoothness worsens or surface glossiness decreases, sensitivity may worsen, so films of Asakura do not have excellent properties.

As a consequence, one skilled in the art would not "expect" the Asakura B layer to be the same as the Applicants' B layer and the high standard for establishing inherency in accordance with MPEP §2112 has not been met.

The Applicants therefore respectfully submit that even if one skilled in the art were to hypothetically combine the B layer of Asakura with the A layer of Sadamitsu, the resulting biaxially-oriented film would be expected to have a B layer having a half-crystallization that is not within the Applicants' claimed range. As a consequence, the Applicants respectfully submit that the combination is inapplicable to the solicited claims. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury  
Reg. No. 31,750  
Attorney for Applicants

TDC/bmm  
(215) 656-3381